

What is claimed is:

1. A carrier comprising carrier particles, said particles comprising a magnetic core and a resin layer covering said core, wherein said carrier particles have a weight average particle diameter Dw which is 22-32 μm and a number average particle diameter Dp which meets with the following condition:

$$1 < \text{Dw/Dp} < 1.20,$$

and

- (1) wherein the amount of said carrier particles having a particle diameter of less than 20 μm is no more than 7wt% of the total weight of said particles,
- (2) wherein the amount of said carrier particles having a particle diameter of less than 36 μm is 90-100wt% of the total weight of said particles, and
- (3) wherein the amount of said carrier particles having a particle diameter of less than 44 μm is 98-100wt% of the total weight of said particles.

2. The carrier as claimed in Claim 1, wherein said particles have a weight average particle diameter Dw which is 22-30 μm , and wherein the amount of said carrier particles having a particle diameter of less than 20 μm is no more than 5wt%.

3. The carrier as claimed in Claim 1, wherein the amount of said carrier particles having a particle diameter of less than 20 μm is no more than 3wt%.

4. The carrier as claimed in Claim 1, wherein said carrier particles provide a magnetic moment of from 70 to 150emu/g in an applied magnetic field at 1 KOe.

5. The carrier as claimed in Claim 1, wherein said carrier particles have a core of MnMgSr ferrite material.

35 6. The carrier as claimed in Claim 1, wherein said carrier particles have a core of Mn ferrite material.

7. The carrier as claimed in Claim 1, wherein said carrier particles have a core of a magnetite material.

- 5 8. The carrier as claimed in Claim 1, wherein the bulk density of the magnetic core is
2.35 to 2.50g/cm³.
9. The carrier as claimed in Claim 1, wherein the specific electro-resistance denoted by
(log R, Ω cm) of the carrier is 12.0 to 14.0.
- 10 10. The carrier as claimed in Claim 1, wherein a resistance of an inner resin layer is more
than that of a surface resin layer.
- 15 11. A carrier as claimed in claim 10, wherein said resin layer comprises a silicone resin
containing aminosilane coupling agent.
12. An electrophotographic developer comprising toner and a carrier according to claim
1.
- 20 13. An electrophotographic developer as claimed in claim 12, wherein toner charge to
mass ratio, when used in such an amount as to provide a covering ratio of 50%, is 15 to
35μc/g.
- 25 14. An electrophotographic developer as claimed in claim 12, wherein said toner
particles have a weight average particle diameter of from 3.0 to 5.0μm.
15. A method for preparing a carrier for an electrophotographic developer, said
carrier comprising carrier particles, each carrier particle comprising a magnetic core and a
resin layer on the surface of said magnetic core ; said method comprising:
- 30 (i) classifying a magnetic material of finely pulverized particles, thereby obtaining
magnetic core particles having a weight average particle diameter Dw which is 22- 32μm
and
- (1) wherein the amount of said carrier particles having a particle diameter of less than
 20μm is no more than 7wt% of the total weight of said particles,
- 35 (2) wherein the amount of said carrier particles having a particle diameter of less than
 36μm is less than 90wt% of the total weight of said particles,
- (3) wherein the amount of said carrier particles having a particle diameter of less than
 44μm is less than 98wt% of the total weight of said particles, and
- (ii) providing a resinous film onto the magnetic core particles.

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- 5 16. A method for preparing a carrier for an electrophotographic developer, said
carrier comprising carrier particles, each carrier particle comprising a magnetic core and a
resin layer on the surface of said magnetic core ; said method comprising:
- 10 (i) providing a resinous film onto the magnetic core particles,
 (ii) classifying a magnetic core particles of finely pulverized particles, thereby
 obtaining magnetic core particles having a weight average particle diameter Dw
 which is 22- 3230 μ m and a number average particle diameter Dp which meets
 with the following condition:
 $1 < Dw/Dp < 1.20$,
 (1)wherein the amount of said carrier particles having a particle diameter of less than
15 20 μ m is no more than 7wt% of the total weight of said particles,
 (2)wherein the amount of said carrier particles having a particle diameter of less than
 36 μ m is less than 90wt% of the total weight of said particles,
 (3)wherein the amount of said carrier particles having a particle diameter of less than
 44 μ m is less than 98wt% of the total weight of said particles
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17. A method as claimed in Claim 15, wherein classifying is accomplished by a vibration
sieve equipped with an ultrasonic wave-generator.
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18. A method as claimed in Claim 15, further comprising classifying the particles having
a resinous film thereon with a vibration sieve equipped with an ultrasonic
wave-generator.
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19. A method as claimed in Claim 17 , wherein the vibration sieve is equipped with an
ultrasonic wave-generator and a resonator ring to transfer ultrasonic waves generated
by the ultrasonic wave-generator to the vibration sieve.
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20. A method as claimed in Claim 18, wherein the vibration sieve is equipped with an
ultrasonic wave-generator and a resonator ring to transfer ultrasonic waves generated
by the ultrasonic wave-generator to the vibration sieve.
21. An image forming method, comprising developing an image with the developer of
Claim 12.
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22. A process cartridge which is freely attachable to an electrophotographic image
forming apparatus and detachable therefrom, wherein said process cartridge comprises

5 dry toner and a carrier according to claim 1.